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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,567	03/21/2007	Brigitta Otto	041165-9103-00	6229

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EXAMINER	
TISCHLER, FRANCES	

ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,567	OTTO ET AL.	
	Examiner	Art Unit	
	FRANCES TISCHLER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

All outstanding objections and rejections, expect for those maintained below, are deemed withdrawn in light of Applicant's amendments.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claims 1 – 5, 7, 10 – 12, 14, 15 and 18 - 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Halek et al (US 4,223,128).

The rejection stands as per reasons of record as discussed in the previous office action of 2/17/09.

Claim 6 has been incorporated into claims 1 and 18. The rejections stand since Halek recognizes the dependence of the dew point of the gas on the intrinsic viscosity.

Claims 8, 9, 13, 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halek et al (US 4,223,128).

The rejection of claims 8, 9 and 13 stand as per reasons of record as discussed in the previous office action of 2/17/09.

Regarding new claim 21: Halek discloses (8:48 – 61) a dependency between the intrinsic viscosity and the dew point of the gas used during crystallization. Halek is silent

as the specific dew points used for specific increases in IV. However, it would have been obvious to one of ordinary skill in the art to have varied the dew point through routine optimization to arrive at the desired increase in viscosity.

Regarding new claims 23 and 24: Halek uses a gas with the desired dew point between about -30 to -100°C, but does not disclose how those gases were prepared so as to arrive to said dew points. However, one of ordinary skill in the art would have known how to prepare said gas, such as by mixing said gas with a moistened gas to arrive at the desired dew point.

Claims 1 – 5, 7 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto et al (WO 03046045, using US 7,262,263 as translation) in view of Halek et al (US 4,223,128).

Halek's disclosure is discussed above and is incorporated herein by reference.

Regarding claims 1, 3, 4, 18, 19 and 20: Otto discloses (abstract, 3:42 - 58, 4:27 – 28, 7:8 - 23) a method for producing polyesters comprising crystallizing the polyester in the presence of air or nitrogen gas, and preferably nitrogen gas, with a dew point of 20°C to -50°C; said polyesters are used in making bottles, sheets, films and filaments without going through solid state polymerization, reading on Applicant's claims.

Applicant claims a dew point of less or equal to approximately -10°C and claims the range extends from -10°C to -85°C. Therefore, Otto's dew point range of 20°C to -50°C teaches a range that substantially overlaps the instantly claimed ranges thereby disclosing sufficient specificity.

Otto is silent as to the dependency of the dew point of the gas to the IV of the polyester. However, it would have been obvious to one of ordinary skill in the art to have varied the dew point of Otto's gas through routine optimization to arrive at the desired IV, since Halek teaches that the IV is dependent on the dew point of the gas used during the crystallization of polyesters where both prior art disclose the same temperature and residence time for the same purpose of crystallizing polyester to remove by-products and diminish agglomeration in order to make bottles.

Regarding claims 5: Otto discloses in Tables 1.2, 2.1 and 2.2 spherical chips with IV of 0.602, 0.804 and 0.795, respectively, and IV of 0.636, 0.812 and 0.827 after crystallization, respectively, reading on Applicant's rise in IV of approximately 0 – 0.11 dL/g.

Regarding claim 8: Applicant claims the crystallization is continuously increased by up to approx. 20°C. Otto discloses (3:55 – 58) that the granulate is crystallized at rising temperatures of 170 – 210°C, reading on Applicant's continual rise in temperature. Otto, however, does not explicitly disclose that the increase is up to 20°C. However, it would have been obvious to one of ordinary skill in the art to have stopped said increase at the desired temperature to achieve the desired crystallization and intrinsic viscosity. For instance, table 1.2 discloses a first crystallization at 200°C followed by a second crystallization at 215°C, giving an increase of 15°C, reading on Applicant's amount of up to 20°C.

Regarding claims 9 and 13: The first stage crystallization is carried out for 30 minutes and the second stage for 60 minutes in step (i), 60 minutes in step (ii) and 180

minutes in step (iii) and a total residence time of 100 – 350 minutes (3:39 – 41, 4:33 – 36, 5:59 - 64), which reads on Applicant's claims of a total of up to 10 hours, first stage of up to 2 hours and second stage of up to 8 hours. Additionally, it would have been obvious to one of ordinary skill in the art to have increased or decreased the crystallization time to increase or decrease the intrinsic viscosity of the polyester, respectively, for the desired results.

Regarding claims 7, 10 – 12, 14 - 17: The crystallization is carried out in two stages: in the first stage, crystallization is carried out under vortexing by way of a gas flow in a fluidized bed reactor with mixing properties and controlled granular flow at temperatures of 170 – 210°C (2:64 – end, 3:1 – 6 and 27 – 58), reading on Applicant's turbulence and temperatures of 150 – 210°C. During the second crystallization stage, the polyester flows (i) under mechanical disturbance and the gas is in countercurrent flow, (ii) under mechanical disturbance and the gas is in concurrent flow, and (iii) without mechanical disturbance and the gas is in concurrent flow, at temperatures of 190 – 220°C (3:1 – 6, 4:19 – 32), reading on Applicant's claims and temperatures of 180 – 230°C. The second crystallization stage is carried out in a shaft crystallizer (4:37 - 40).

Regarding new claim 21: Otto discloses a gas with dew points of 20 to -50°C but fails to disclose specific dew points used for specific increases in IV. However, it would have been obvious to one of ordinary skill in the art to have varied the dew points through routine optimization to arrive at the desired increase in viscosity since Halek discloses that there is a relationship between the dew point of the gas and the IV obtained during the crystallization of polyester.

Regarding new claim 22: Otto discloses (3:50 – 58) crystallization in the presence of a gas with a dew point of 20 to – 50°C in both crystallization stages.

Regarding new claims 23 and 24: Otto uses a gas with the desired dew point between about 20 to -50°C, but does not disclose how those gases were prepared so as to arrive to said dew points. However, one of ordinary skill in the art would have known how to prepare said gas, such as by mixing said gas with a moistened gas to arrive at the desired dew point.

Claims 16, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halek et al (US 4,223,128) in view of Otto et al (WO 03046045, using US 7,262,263 as translation).

The rejection of claims 16 and 17 stands as per reasons of record as discussed in the previous office action of 2/17/09.

Halek's and Otto's disclosure is discussed above and is incorporated herein by reference.

Regarding new claim 22: Halek discloses using a gas in the first crystallization stage and a gas in the second stage wherein the gas has a low dew point in said second stage. Halek is silent as to a dew point of the gas in the first stage. However, it would have been obvious to one of ordinary skill in the art to have performed Halek's first stage crystallization using a gas with a low dew point as disclosed by Otto for the same purpose of crystallizing the polyester and increasing its IV, removing by-products and preventing agglomeration, in order to make bottles.

Response to Arguments

Applicant's arguments filed 6/17/09 have been fully considered but they are not persuasive.

Applicant submits that Halek discloses the use of a gas at dew points lower than -30oC in the stabilization step only, while the instant application claims a gas at dew points lower than -10°C in both crystallization stages. Applicant submits that Halek does not teach that the dew point of the gas is set in dependence of the desired rise in IV.

Applicant's arguments are not convincing:

(1) Halek's use of the term of a second stabilization stage is equivalent to Applicant's second crystallization stage since the same process is performed, namely Halek's polymer moves to a second reactor where the temperature, the residence time and circulation of gas at lower dew points are the same as claimed by Applicant (and disclosed by Otto). In this reactor, Halek's IV increases, as claimed by Applicant. Additionally, a rejection was also previously made over Otto in view of Halek regarding the second crystallization unit, since it would have been obvious to have replaced Halek's second reactor with Otto's second reactor for the same purpose of crystallizing the polyester with a gas at low dew points.

(2) Halek discloses dew points of -30 to –100°C and Otto discloses dew points of 20 to -50°C, which, separately or combined, substantially overlap Applicant's claim of dew points that are approximately lower than or equal to -10°C and dew points of approximately -10 to -85°C.

(3) Independent claims 1 and 18 claim a dew point but do not claim two crystallization stages, thus reading on Halek's disclosure. Besides new dependent claim 22, all dependent claims that claim the separation of the process into two stages do not specify which stage uses a gas with a specific dew point. Halek also discloses (9:58 – 64) that the two stages can be carried out in a single apparatus, further reading on Applicant's claims. It is noted that Otto discloses gas dew points for both crystallization stages.

(4) Halek recognizes that the intrinsic viscosity is dependent on the dew point of the gas (see column 8, lines 52 – 56). Therefore, one of ordinary skill in the art would have known to vary the dew point though routine optimization to arrive at the desired IV.

Applicant submits that Otto does not disclose the previously recited claim 6, now in amended claim 1, claiming the dew point dependence on the desired IV.

Applicant's argument is not convincing. Claim 6 was previously rejected over Otto in view of Halek who discloses said dependency (see discussion above).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANCES TISCHLER whose telephone number is (571)270-5458. The examiner can normally be reached on Monday-Friday 7:30AM - 5:00 PM; off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/
Primary Examiner, Art Unit 1796

Frances Tischler
Examiner
Art Unit 1796

/FT/